State Control Regulations as Compared to Federal Rules (VOC & Minor Source Permits)

Table Below Updated from WRAP (2013): Analysis of States' and EPA Oil & Gas Air Emissions Control Requirements for Selected Basins in the We
https://www.wrapair2.org/Analysis.aspx

Source Category	EPA Regulations	BLM Regulations[1], [2]	Alaska
Well Completions	**Subpart OOOO and OOOOa**: Green completions (in combination with pit flaring for gas not suitable for entering a pipeline) required for all hydraulically fractured or re- fractured, non- exploratory or non- delineation wells. Certain wells (e.g., wildcat, delineation, and low pressure wells) are exempted.	**BLM Methane Rule:** No requirements beyond Subpart OOOO and Subpart OOOOa	
Compression	**Subpart OOOO and OOOOa FUGITIVE STANDARDS**: Requires wet seal centrifugal units to achieve 95% VOC control, and requires reciprocating engines to replace rod packing every 26,000 hours or every 36 months		
Pneumatic Controllers	**Subpart OOOO and OOOOa**: Zero emission limit @ gas processing plants (equivalent to non gas-driven pneumatic controllers); Six SCFH @ other locations (equivalent to low bleed gas- driven pneumatic controllers)	**BLM Methane Rule**: Six SCFH(equivalent to low bleed gas- driven pneumatic controllers) @ all locations	
Pneumatic Pumps	**Subpart OOOOa**: Zero emission limit for natural gas driven diaphragm pumps @ gas processing plants. At well site, natural gas driven diaphragm pumps operated ≥ 90 days/yr required to route to control device or process, with ≥ 95% control	**BLM Methane Rule**: Replace pneumatic diaphragm pumps that operate 90 or more days per year with zero emissions pumps or route to on-site flare if replacement is not possible	
Equipment Leak Fugitives - wellsite and compressor stations	**Subpart OOOO and OOOOa**: Require owners/operators to monitor and repair "fugitive emissions" at well sites and compressor stations. Semi-annual inspections required at well-site, quarterly inspections required at compressor stations. Well sites that contain only wellheads are exempt from the leak detection and repair requirements.	**BLM Methane Rule**: Require owners/operators to use an instrument-based approach to leak detection	
Equipment Leak Fugitives -Gas Processing Plants	**Subpart OOOO and OOOOa**: Require owners/operators to monitor and repair "fugitive emissions" at gas plants. Quarterly inspections are required **Subpart HH:** 500 ppm threshold for valve leaks	**BLM Methane Rule:** Require owners/operators to use an instrument-based approach to leak detection	Alaska has adopted NSPS Subpart KKK on LDAR

Stat		
Colorado	**California**	**Montana**
COGCC HB-07-1341, Section 805.b(3) Green completions shall be used when technically and economically feasible. If not feasible, Best Management Practices shall be used.		**MT DNRC BOGC 36.22.1221** All gas vented to the atmosphere at a rate exceeding 20 MCF per day for a period in excess of 72 hours shall be burned.
	Emission standards for reciprocating compressor rod packings and centrifugal compressor wet seals. Requires either (1) replacement of high-emitting rod packing or wet seal, or (2) collection of leaking gas. All compressors subject to LDAR.	Montana has permitting and registration rules for controlling fugitive VOC vapors[3]
Reg. 7, XVIII.C.1 No or low-bleed pneumatic devices required for all new & existing applications. (exceptions allowed) (only applies in ozone non- attainment areas) **COGCC HB-07-1341, Section 805.b(2)E** No or low- bleed required for new, repaired or replaced devices where technically feasible	Air or electricity to operate; or, Controlled with a vapor collection system	Montana has permitting and registration rules for controlling fugitive VOC vapors[3]
	Air or electricity to operate; or, Controlled with a vapor collection system	
	Requires daily inspections and quarterly testing to check components for leaks. Regulation will extend testing to methane at natural gas facilities. Optical Gas Imaging for screening, but US EPA Method 21 for enforcement.	
Colorado has adopted NSPS Subpart KKK on LDAR under **Reg. 7, XII.G.1** (KKK applies at gas processing plants located in ozone non-attainment areas regardless of the date of construction of the affected facility)		Montana has adopted NSPS Subpart KKK on LDAR

e Regulations		
New Mexico	**North Dakota**	**Utah**
New Mexico has adopted NSPS Subpart KKK on LDAR	North Dakota has adopted NSPS Subpart KKK on LDAR	Utah has adopted NSPS Subpart KKK on LDAR

Wyoming
C6 S2 O&G Permitting Guidance Wyoming has 3 area categories; 1) Jonah-Pinedale Anticline Development (JPAD), 2) Concentrated Development Area (CDA) & 3) Statewide Green completions are required in the JPAD area and CDA's in Wyoming as of August 1, 2011.
C6 S2 O&G Permitting Guidance Install low or no-bleed at all new facilities. Upon modification of facilities, new pneumatic controllers must be low/no-bleed and existing controllers must be replaced with no/low- bleed. (well site facilities only - not gas plants)
Wyoming has adopted NSPS Subpart KKK on LDAR

Condensate & Crude Oil Tanks	**Subpart OOOO**: 95% VOC reduction for new or modified storage vessels that have PTE of 6 TPY VOC emissions. (phased in date for implementation through 2015). **Subpart HH**: 95% control of HAP's @ production facilities	**BLM Methane Rule**: Route vapor gas to sales line for existing storage vessels that have PTE of 6 TPY VOC emissions. If not possible, route gas to combustor or flare control device.	NONE
Glycol Dehydrators	**Subpart HH**: 95% reduction of HAP's in all large glycol dehydrators (> 3 MMCFD or > 1 tpy benzene emissions). Small dehydrator emission limits of 4.66 E-6 grams BTEX/scm-ppmv (new units) or 3.28 E- 4 grams BTEX/scm- ppmv (existing units)	Not applicable	NONE
Liquid Unloading	NONE	**BLM Methane Rule**: Requires an operator to minimize gas losses by implementing best management practices.	

(**Reg. 7, XII.G.2**) 95% VOC reduction @ gas processing plants if uncontrolled emissions from condensate tanks are ≥ 2 tpy (only applies in ozone non-attainment areas) (**Reg. 7, XVII.C.1**) 95% VOC reduction for condensate storage tanks if uncontrolled emissions ≥ 20 tpy **(Reg. 7, XVII.C.2)** For condensate storage tanks with past uncontrolled actual emissions < 20 tpy VOC may become subject to Section XVII.C.1 with addition of a newly drilled well (or recompletion/ stimulation of an existing well), Such tanks have 90 days after 1st production to install/operate control equipment. If emissions of VOC still < 20 tpy CDPHE notification required w/ explanation of the determination methodology. **(Reg.. 7, XIID)** Condensate tanks in ozone non-attainment areas shall be controlled under a system wide approach (**COGCC HB-07-1341, Section 805.b(2)A**) 95% VOC reduction for liquids condensate & crude oil tanks if uncontrolled emissions ≥ 5 tpy within 1/4 mile of an affected building (applies only to Garfield, Mesa & Rio Blanco Counties)	**CCR Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4** Applies to systems at all regulated facilities. Requires flash testing to determine annual methane emissions. Requires systems with annual emissions above 10 metric tons (MT) methane to install vapor collection. Exemptions for low throughput systems and small gauge tanks.	**17.8.1603(1)(b)** VOC vapors from O&G oil or condensate storage tanks with a PTE > 15 tpy must be routed to a gas pipeline or emissions minimizing technology. **Registration - 17.8.1711 (1)(a)-** VOC vapors from each piece of O&G well facility equipment with PTE >15 tpy, must be captured and routed to a gas pipeline, or routed to air pollution control equipment with a 95% or greater control efficiency **17.8.1711(1)(b)** requires submerged filling technology on all hydrocarbon liquid loading or unloading 30
Reg. 7, XII.H and XVII.D 90% reduction of VOCs where uncontrolled VOC emissions ≥ 15 tpy **COGCC HB-07-1341, Section 805.b(2)C**) 90% reduction of VOCs required where uncontrolled VOC emissions ≥ 5 tpy within 1/4 mile of an affected building (applies only to Garfield, Mesa & Rio Blanco Counties)		Montana has permitting and registration rules for controlling fugitive VOC vapors[3]

NONE	**NDAC Section 33-15-07** submerged filling requirements for tanks >1,000 gallons and control of organic compounds **Bakken Pool O&G Production Facilities Air Pollution Control Permitting & Compliance Guidance** tanks constructed after 6/1/2011 must control VOC by 98% (90% if PTE < 20 TPY)	**R307-327 Ozone Nonattainment Area** Volatile Petroleum Liquid Tanks (> 40,000 gallons, true vapor pressure [TVP] > 1.52 psia at storage temperature) shall be controlled to minimize vapor loss. New tanks shall be fitted with an internal floating roof resting on the liquid surface with the space (roof edge to tank wall) sealed. Owner/operator shall maintain records of the liquid type/maximum TVP. Records required of average monthly storage temperature, the liquid type, throughput and maximum TVP for tanks not subject to above (petroleum liquid TVP > 1.0 psia)
NONE	TEG units with a condenser require temperature monitoring **Bakken Pool O&G Production Facilities Air Pollution Control Permitting & Compliance Guidance** dehydrators constructed after 6/1/2011 must control VOC by at least 90%	NONE

C6 S2 O&G Permitting Guidance
Wyoming has 3 area categories; 1) Jonah-Pinedale Anticline Development (JPAD), 2) Concentrated Development Area (CDA) & 3) Statewide
JPAD - 98% control of all new/modified tank emissions upon startup/modification
CDA – 98% control of all new/modified tank emissions ≥ 8 tpy VOC within 60 days of startup/modification **Statewide** 98% control of all new/modified tank emissions ≥10 tpy VOC within 60 days of startup/modification

C6 S2 O&G Permitting Guidance
Wyoming has 3 area categories; 1) Jonah-Pinedale Anticline Development (JPAD), 2) Concentrated Development Area (CDA) & 3) Statewide
JPAD 98% control of all new/modified dehydrator VOC/HAP emissions at start up
CDA & Statewide ***PAD Facilities*** - 98% control upon startup
SINGLE Well Facilities - 98% control within 60 days of startup for VOC emissions ≥6 **OR** 98% control within 30 days of startup for VOC emissions
≥8 tpy

Flaring	NONE	**BLM Methane Rule:** Requires to minimize flaring by setting up capture goals for vented vapor gas. A phased-in capture percentage that ends in 2026 with 98%. In addition, limited daily or monthly flaring volume allowance (phased in date for implementation through 2025)	
Minor Source Permitting	NSR permitting required for minor sources (< NSR thresholds of 100-250 tpy) **in Indian Country**	NONE	

[1] BLM methane rule is applicable to all existing and new sources on federal land. As of now the final rule is effective from January 17, 201

[2] Under Executive Order 13783, as of mid-February 2018, BLM is in the initial stages of the process to revise the BLM Methane Rule.

[3] **Montana VOC Rules:**

Reg. 3 Part B, II.D Minor Source permitting required for sources with thresholds that vary by pollutant and area (generally required in non-attainment areas for criteria emissions > 1-5 tpy – required statewide for criteria emissions > 5-10 tpy – thresholds depend on the pollutant)		**17.8.743 Montana Air Quality Permits (MAQP)** NSR permitting required for sources with > 25 tpy PTE **17.8.1702**: A registration eligible facility may register in lieu of obtaining a MAQP

7.

20.2.72 **NMAC** requires permits for all sources >25 tpy of a criteria pollutant. **20.2.73** **NMAC** requires Notices of Intent for all sources >10 tpy of a criteria pollutant	NONE (registration of O&G facilities required per Chapter 33-15-20 rules in lieu of a permit)	**UAC Rule 307- 401-9** NSR permitting exempted for sources with controlled emissions below de minimis levels: PTE< 5 tpy each PM10, NOx, SOx, CO, VOCs, or single HAP < 500 lbs per year, combined HAP < 1 tpy

Emissions from minor sources must be approved through permitting applied through the WAQSR **Chapter 6 Section 2(a)(i) O&G Permitting Guidance**. For VOC emissions ≥8 tpy from sources other than tanks, dehydrators, pneumatic controllers and pumps, water tanks, BACT is considered on case-by- case basis.

Cell: F5
Comment: John Grant:
California omitted from WRAP (2013). Added information from ARB Feb 13 presentation to OGWG

State Control Regulations as Compared to Federal Rules (NOx Control Requirements)

Table Below Updated from WRAP (2013): Analysis of States' and EPA Oil & Gas Air Emissions Control Requirements for Selected Basins in the https://www.wrapair2.org/Analysis.aspx

Source Category	Federal Regulations	Alaska	Colorado
Gas Fired Process Heaters and Boilers	**Subpart Db & Dc** O&G sources generally covered, but sources are typically too small for applicability under these regulations	No additional state requirements, but Alaska has adopted NSPS Subpart Db & Dc	No additional state requirements, but Colorado has adopted NSPS Subpart Db & Dc
Compression Ignition (CI) Internal Combustion Engines (ICE) (typically diesel drill rig engines in O&G)	**Subpart IIII** grams/hp-hr standards for NOx from CI-ICE	No additional state requirements, but Alaska has adopted NSPS Subpart IIII	No additional state requirements, but Colorado has adopted NSPS Subpart IIII
Spark Ignition (SI) Internal Combustion Engines (ICE) (typically gas fired compressor engines in O&G)	**Subpart JJJJ** grams/hp-hr standards for NOx from SI-ICE	No additional state requirements, but Alaska has adopted NSPS Subpart JJJJ	Colorado has not adopted NSPS Subpart JJJJ, but **Reg. 7, XVII.E** sets the ceiling for emissions of SI- ICE
Gas Turbine Engines (typically gas fired compressor or generator engines in O&G)	**Subpart KKKK** parts per million standards for NOx from Gas Turbines	No additional state requirements, but Alaska has adopted NSPS Subpart KKKK	No additional state requirements, but Colorado has adopted NSPS Subpart KKKK
Temporary Compression Ignition (CI) & Spark Ignition (SI) Internal Combustion Engines (ICE) (typically drill & workover rig engines in O&G)	**Nonroad Mobile Tier Standards** grams/kw-hr standards for NOx for CI and SI-ICE	**18AAC50.502(c)(2)** Requires a minor source permit for temporary portable O&G operations to comply w/ AAAQS (no BACT) Nonroad Mobile Tier Standards take precedence	**Reg. 3 Part A, I.B.31** Requires Nonroad Engines >1200 HP operating >4380 Hr/Yr w/ 100 TPY NOx (40 TPY @ existing major source) to obtain a state permit w/ conditions to comply w/ CAAQS Nonroad Mobile Tier Standards take precedence

Western United States (2013 Update), Table 3

State Regulations				
California	**Montana**	**New Mexico**	**North Dakota**	**Utah**
	No additional state requirements, but Montana has adopted NSPS Subpart Db & Dc	No additional state requirements, but New Mexico has adopted NSPS Subpart Db & Dc	No additional state requirements, but North Dakota has adopted NSPS Subpart Db & Dc	No additional state requirements, but Utah has adopted NSPS Subpart Db & Dc
	No additional state requirements, but Montana has adopted NSPS Subpart IIII	No additional state requirements, but New Mexico has adopted NSPS Subpart IIII	No additional state requirements, but North Dakota has adopted NSPS Subpart IIII	No additional state requirements, but Utah has adopted NSPS Subpart IIII
	Montana has adopted NSPS Subpart JJJJ **ARM 17.8.1711** requires catalytic controls or equivalent on all stationary internal combustion engines > 85 HP	No additional state requirements, but New Mexico has adopted NSPS Subpart JJJJ	No additional state requirements, but North Dakota has adopted NSPS Subpart JJJJ	No additional state requirements, but Utah has adopted NSPS Subpart JJJJ
	No additional state requirements, but Montana has adopted NSPS Subpart KKKK	No additional state requirements, but New Mexico has adopted NSPS Subpart KKKK	No additional state requirements, but North Dakota has adopted NSPS Subpart KKKK	No additional state requirements, but Utah has adopted NSPS Subpart KKKK
	Montana has no separate state restrictions for temporary CI or SI-ICE Nonroad Mobile Tier Standards take precedence	New Mexico has no separate state restrictions for temporary CI or SI-ICE Nonroad Mobile Tier Standards take precedence	North Dakota has no separate state restrictions for temporary CI or SI-ICE Nonroad Mobile Tier Standards take precedence	Utah has no separate state restrictions for temporary CI or SI-ICE Nonroad Mobile Tier Standards take precedence

Wyoming
No additional state requirements, but, Wyoming has adopted NSPS Subpart Db & Dc
No additional state requirements, but Wyoming has adopted NSPS Subpart IIII
No additional state requirements, but Wyoming has adopted NSPS Subpart JJJJ
No additional state requirements, but Wyoming has adopted NSPS Subpart KKKK
Wyoming has no separate state restrictions for temporary CI or SI-ICE Nonroad Mobile Tier Standards take precedence Wyoming has an Interim Policy for the **GRB Ozone Non-Attainment area** allowing operators to voluntarily permit temporary drill rig engines w/ BACT control in return for future emission credits.